REMARKS/ARGUMENTS:

Claims 37, 62, and 113 have been amended. Support for the amendments to claims 37, 62, and 113 can be found in Figs. 1B-1E and at p. 22, lines 12-18 of the Applicant's specification. Claims 37-49, 51, 53, 54, 62, 64, 66, 83-97, and 113-128 are pending in the application. Reexamination and reconsideration of the application, as amended, are respectfully requested.

The present invention relates to a manufacturing process for an organic EL (electroluminescence) element, an electrically light-emitting element that may be used in displays, display light sources, and the like. In particular, it relates to a composition for use as a hole injecting and transporting layer suitable for ink jet patterning. (Applicant's specification, at p. 1, lines 8-14).

CLAIM REJECTIONS UNDER 35 U.S.C. § 103:

Claims 113-127 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagayama et al. (U.S. Patent No. 5,701,055) in view of Woo et al. (U.S. Patent No. 6,169,163). Applicant respectfully traverses this rejection. Claim 113, as amended, is as follows:

> An organic EL element, having a stacked structure including a hole injecting or transporting layer and a light-emitting layer formed within a partitioning member which is divided into individual pixel areas, manufactured by a manufacturing process, comprising:

forming a plurality of anode layers

forming the partitioning member over a substrate, the partitioning member lying at least between adjacent ones of the plurality of anode layers so as to independently partition the adjacent ones of the plurality of anode layers, whereby a plurality of openings are formed over at least a portion of an anode layer, the openings corresponding to the pixel areas; wherein a side of the partitioning member contacts the substrate, wherein a second side of said partitioning member contacts an anode layer, and wherein said anode layer contacts said substrate

forming a hole injecting or transporting layer by independently filling each of the openings with a composition for the hole injecting or transporting layer using an ink-jet head, the composition comprising (1) a conductive material containing at least a lubricant, polyethylene dioxythiophene, and polystyrene sulfonic acid, and (2) a solvent;

drying the composition filled in the openings to form the hole injecting or transporting layer; and

independently filling each of the openings with a light-emitting layer composition over the hole injecting or transporting layer using an ink-jet head to form the light-emitting layer, wherein a height of the hole injecting or transporting layer and the light-emitting layer is less than that of the partitioning member;

forming a cathode layer over the light-emitting layer.

Applicant respectfully submits that the cited references cannot render claim 113 obvious because the cited references fail to teach or suggest a side of the partitioning member that contacts the substrate and a second side of the partitioning member that contacts an anode layer, wherein the anode layer contacts

the substrate. Claim 113 was amended to clarify that the partitioning member that contacts the substrate is also in direct contact with an anode layer that itself is in direct contact with the substrate and the partitioning member's points of contact with the substrate and anode layer occur on different sides of the partitioning member. The Office in its "Response to Arguments" relies on Figs. 2, 6, 7, and 15-19 of Nagayama to show that the partition walls (7, 40, 60) contact the substrate (2) between anodes (3). However, the Applicant respectfully submits that none of the cited Figures reveal a side of a partitioning member that contacts a substrate and a second side of said partitioning member that contacts an anode layer, wherein said anode layer contacts said substrate. Furthermore, there is nothing in the specification of Nagayama that teaches or suggests the above limitation.

It is an aspect of the present invention that the partitioning member be formed on a glass substrate. Specifically, non-photosensitive polyimide (partitioning member) buried between anodes (ITO electrodes) and also serving as an ink drip prevention wall (blank) was formed by photolithography. (Applicant's specification, at p. 22, lines 13-18).

Woo cannot remedy the defect of Nagayama and is not relied upon by the Office for such. Instead, the Office cites Woo for teaching the use of PEDT doped with PSS as a hole-transporting layer for organic EL devices.

In light of the foregoing, Applicant respectfully submits that Nagayama and Wood could not have made amended claim 113 obvious, because the combination of references fails to teach or suggest each and every claim limitation. Claims 114-127 depend from claim 113 and as such include all the limitations of amended claim 113, and therefore, cannot be made obvious for at least the same reasons as claim 3. Withdrawal of these rejections is thus respectfully requested.

Claims 37-49, 51, 53, 62, 64, 66, 83-96, and 113-127 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagayama in view of Woo, as applied to

claim 113, above, and further in view of Jonas (U.S. Patent No. 5,766,515, hereafter Jonas '515), Taniguchi et al. (U.S. Patent No. 5,667,572), and Roitman (U.S. Patent No. 5,972,419). Applicant respectfully traverses this rejection.

Claims 37-49, 51, 53, 62, 64, 66, 83-96, and 113-127 require that a side of the partitioning member contacts the substrate and a second side of the partitioning member contacts an anode layer, wherein the anode layer contacts the substrate. Consequently, claims 37-49, 51, 53, 62, 64, 66, 83-96, and 113-127 are unpatentable over Nagayama and Woo for the reasons discussed above. Neither Jonas '515, nor Taniguchi nor Roitman can remedy the defect of Nagayama and Woo and these references are not relied upon by the Office for such. Instead, the Office cites Jonas '515 for teaching that polythiophene films suitable for deposition in EL devices are formed using compositions including PEDT and PSS and a solvent; for teaching that such compositions may be applied by liquid coating methods including printing methods; and for teaching that the applied film is then dried. In addition, the Office cites Taniguchi for teaching that the preparation of inks that contain ionic polymers may be made in mixtures containing water-miscible organic solvents, such as glycerin, diethlene glycol and ethoxyethanol. Lastly, the Office cites Roitman for teaching that it is known to deposit multiple colors of electroluminescent materials between barriers using ink-jet printing.

In light of the foregoing, Applicant respectfully submits that the cited references could not have rendered claims 37-49, 51, 53, 62, 64, 66, 83-96, and 113-127 obvious because the cited references fail to teach or suggest each and every claim limitation. Withdrawal of this rejection is thus respectfully requested.

Claims 54, 97, and 128 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagayama, Woo, Jonas '515, Taniguchi, and Roitman as applied to claims 37, 62, and 113, above, and further in view of Jonas (U.S. Patent No. 6,004,483, hereafter Jonas '483). Applicant respectfully traverses this rejection.

Claims 54, 97, and 128 depend from claims 37, 62, and 113, respectively and as such include all the limitations of claims 37, 62, and 113, and therefore, cannot be rendered obvious over Nagayama, Woo, Jonas '515, Taniguchi, and Roitman for at least the same reasons discussed above. Jonas '483 cannot remedy the defect of the aforementioned references and is not relied upon by the Office for such. Instead, the Office cites Jonas '483 for teaching that polythiophene films similar to Jonas '515 can be printed with resistances of 10^{10} to 0.1 ohm/square.

In light of the foregoing, Applicant respectfully submits that the cited references could not have rendered claims 54, 97, and 128 obvious because the cited references fail to teach or suggest each and every claim limitation. Withdrawal of this rejection is thus respectfully requested.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 337-6809 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,
HOGAN & HARTSON L.L.P.

Date: September 23, 2004

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